

Claims

1. A process for preparing tetrahydropyran-4-ol which comprises the steps of:
- 5 (A) a cyclization step of preparing tetrahydropyranyl-4-formate represented by the formula (1):



by reacting 3-buten-1-ol, a formaldehyde compound and formic acid, and

- 10 (B) then, a solvolysis step of subjecting the tetrahydropyranyl-4-formate to solvolysis to obtain tetrahydropyran-4-ol represented by the formula (2):



2. The process for preparing tetrahydropyran-4-ol according to Claim 1, wherein the formaldehyde compound is at least one selected from the group consisting of formalin, paraformaldehyde and trioxane.

3. The process for preparing tetrahydropyran-4-ol according to Claim 1 or 2, wherein the cyclization step is carried out by reacting 1.0 to 5.0 mol of the formaldehyde compound in terms of the formaldehyde and 1 to 20 mol of formic acid based on 1 mol of 3-buten-1-ol.

4. The process for preparing tetrahydropyran-4-ol according to Claim 1 or 2, wherein the cyclization step is carried out by reacting 1.1 to 2.0 mol of the formaldehyde compound in terms of the formaldehyde and 2 to 10 mol of formic acid based on 1 mol of 3-buten-1-ol.

5. The process for preparing tetrahydropyran-4-ol accord-

ing to any one of Claims 1 to 4, wherein the cyclization step is carried out in the presence or absence of a solvent at a temperature of 10 to 110°C.

6. The process for preparing tetrahydropyran-4-ol according to any one of Claims 1 to 4, wherein the cyclization step is carried out in the presence or absence of a solvent at a temperature of 50 to 100°C.

5 7. The process for preparing tetrahydropyran-4-ol according to any one of Claims 1 to 6, wherein the solvolysis 10 step is carried out in the presence of an acid in water, alcohol, or a mixed solvent of water and an alcohol.

8. The process for preparing tetrahydropyran-4-ol according to Claim 7; wherein the acid is at least one selected 15 from the group consisting of organic sulfonic acids; inorganic sulfonic acids; hydrohalogeno acids; and halogenated carboxylic acids.

9. The process for preparing tetrahydropyran-4-ol according to Claim 7 or 8, wherein the acid is at least one selected from the group consisting of methanesulfonic acid, 20 ethanesulfonic acid, benzenesulfonic acid, p-toluene-sulfonic acid, sulfuric acid, chlorosulfuric acid, hydrofluoric acid, hydrochloric acid, hydrobromic acid, hydroiodic acid, chloroacetic acid and dichloroacetic acid.

10. The process for preparing tetrahydropyran-4-ol according to any one of Claims 7 to 9, wherein the acid is used 25 in an amount of 0.1 to 200 mg based on 1 g of the tetrahydropyranyl-4-formate.

11. The process for preparing tetrahydropyran-4-ol according to any one of Claims 7 to 10, wherein the alcohol is at 30 least one selected from the group consisting of methanol, ethanol, n-propyl alcohol, isopropyl alcohol, n-butyl alcohol, sec-butyl alcohol, t-butyl alcohol, pentyl alcohol, methoxy ethanol, ethoxy ethanol, ethylene glycol and triethylene glycol.

35 12. The process for preparing tetrahydropyran-4-ol according to any one of Claims 7 to 11, wherein the alcohol is at

least one selected from the group consisting of methanol, ethanol, n-propyl alcohol and isopropyl alcohol.

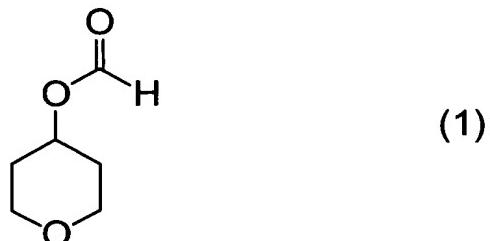
13. The process for preparing tetrahydropyran-4-ol according to any one of Claims 7 to 12, wherein the alcohol is used in an amount of 1 to 100 mol based on 1 mol of the tetrahydropyranyl-4-formate.

14. The process for preparing tetrahydropyran-4-ol according to any one of Claims 7 to 13, wherein the solvolysis step is carried out at a temperature of 20 to 120°C and under stirring.

15. Tetrahydropyranyl-4-formate represented by the formula (1):



16. A process for preparing tetrahydropyranyl-4-formate represented by the formula (1):



which comprises reacting 3-buten-1-ol, a formaldehyde compound and formic acid.

17. The process for preparing tetrahydropyranyl-4-formate according to Claim 16, wherein the formaldehyde compound is at least one selected from the group consisting of formalin, paraformaldehyde and trioxane.

18. The process for preparing tetrahydropyranyl-4-formate according to Claim 16 or 17, wherein the reaction is carried out by reacting 1.0 to 5.0 mol of the formaldehyde compound in terms of the formaldehyde and 1 to 20 mol of

formic acid based on 1 mol of 3-buten-1-ol.

19. The process for preparing tetrahydropyranyl-4-formate according to Claim 16 or 17, wherein the reaction is carried out by reacting 1.1 to 2.0 mol of the formaldehyde compound in terms of the formaldehyde and 2 to 10 mol of formic acid based on 1 mol of 3-buten-1-ol.

5 20. The process for preparing tetrahydropyranyl-4-formate according to any one of Claims 16 to 19, wherein the reaction is carried out in the presence or absence of a solvent at a temperature of 10 to 110°C.

10 21. The process for preparing tetrahydropyranyl-4-formate according to any one of Claims 16 to 19, wherein the reaction is carried out in the presence or absence of a solvent at a temperature of 50 to 100°C.